

REMARKS

Claims 1-21 are pending in this application. Claims 1 and 6 are amended hereinabove. Claims 7 to 21 are newly added.

Claims 1-6 were rejected under 35 U.S.C. §112, second paragraph, in the Office Action of August 10, 2004. This informality has been cured hereinabove by canceling the term "about" in claim 1.

In the Office Action dated August 10, 2004, claims 1, 3, 5, and 6 were rejected as being obvious over EP 255,381 in view of Hardy et al. ('035) and further in view of Sicken ('100).

EP 255,381 teaches a four-component flame retardant system where one of the components is a poly(organophosphate/phosphonate). Persons of ordinary skill in the art recognize that this "poly" reagent required by this reference has a direct phosphorus-to-hydrocarbon or phosphorus-to-hydrogen bond, as required in any phosphonate structure, whereas the present invention relies upon the use of an oligomeric phosphate as component (b) which has only -OR substituents bonded to the phosphorus atoms contained therein. Those of ordinary skill in the art do not ordinarily equate phosphates with phosphonates.

The lack of disclosure of the claimed invention by the EP patent is not cured by the Hardy et al. and Sicken references. The teachings of Hardy et al., as well as Sicken, relate to phosphate ester compositions and in the absence of the hindsight knowledge of applicants' invention, Hardy et al. and Sicken would not ordinarily be combined with the EP citation, since the Hardy et al. and Sicken references relate to phosphate flame retardants whereas the teachings of the primary reference EP patent, as described above, relate only to phosphonate flame retardants. Any replacement of the EP's hybrid structure phosphonate-containing structure with the chemically distinct Hardy et al./Sicken phosphate material(s) amounts to a destruction of the EP intent of having phosphonate moieties in its flame retardant additive.

Furthermore and referring to new independent claim 13 and the claims depending therefrom added hereinabove, the recitation "consisting essentially of" in these claims closes the claims to the presence of significant amounts of unnamed materials which would affect the basic and novel characteristics of the claimed composition. EP 255,381 teaches a four-component flame retardant system including: a dialkylalkanolaminoalkylphosphonate flame retardant, a

poly(organophosphate/ phosphonate) flame retardant, a polyhalogenated aromatic compound flame retardant and alumina trihydrate. In no case, for example, is the composition percentage of any of the four components of EP 255,381 as set forth in the table at page 3 less than 6 percent based on the total weight of the four component flame retardant package. Moreover, claim 1 of EP 255,381 characterizes the four components as essential flame retardant additives. Certainly, therefore, there would be no suggestion to remove any of the components from the four-component flame retardant system of EP 255,381 to obtain the essentially two component system, as presently claimed by applicants.

In the Office Action dated August 10, 2004, claims 1, 2, 4, and 6 were rejected as being obvious over Biranowski in view of Hardy et al. and further in view of Sicken.

Biranowski discloses the use of a polyglycol hydrogen polyphosphonate flame retardant. This primary reference is deemed even more remote from the present invention than the previously discussed EP 255, 381 citation, since Biranowski shows no phosphate moieties in its phosphonate reagent at all.

The lack of suggestion of the claimed invention by Biranowski is not cured by the additional citation of both Hardy and Sicken. In fact, Hardy et al., as well as Sicken, which relate to phosphate ester compositions, would not be combined with Biranowski in the absence of the hindsight knowledge of applicants' invention, since Biranowski, as described above, only suggests using a particular phosphonate component, whereas the Hardy/Sicken citations only teach a phosphate choice. Any replacement of the Biranowski's phosphonate structure by the chemically distinct Hardy/Sicken phosphate material(s) would amount to a destruction of the Biranowski intent of having a phosphonate moiety in its polyglycol hydrogen polyphosphonate flame retardant additive.

Furthermore, new claims 11, 14 and 19 added hereinabove, recite a minimum of 60% by weight of the monomeric halogenated flame retardant (a). This recitation further serves to avoid reading on or being obvious over the Biranowski reference which calls for at least 50% of the polyphosphonate flame retardant. See, e.g., Biranowski column 6 lines 9-14 wherein the ratios given indicate the permitted range of the non-reactive halogen and phosphorus containing reagent (which is analogous to applicants' monomeric halogenated component (a)) extends from 5% to a

maximum value of 50%. There is no suggestion that this component be no less than 60%, as recited in new claims 11, 14, and 19 herein.

Independent claim 16 and dependent claims 17-20 are directed to a method of making a flame retardant polyurethane material. Support for these claims can be found throughout the present specification and in U.S. Patent No. 3,956,200 (Biranowski), incorporated by reference in the present application, and which discloses the preparation of polyurethane foams.

For at least the reasons stated above, all of the claims now pending in this application are submitted to be patentable and in condition for allowance, the same being respectfully requested.

Respectfully submitted,


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